

REMARKS

Applicants wish to thank the Examiner for considering the present application. In the Office Action dated March 13, 2003, claims 1-19 are pending in the application. Applicants respectfully request the Examiner to reconsider the rejections. New claims 20-24 are herein presented and no new matter is being thereby introduced.

The title has been herein amended to make it more descriptive. One paragraph in the specification has been amended to improve clarity and conformity with the rest of the specification. No new matter is being thereby introduced.

The drawings were objected to for not showing reference numeral "16F." Applicants submit herewith a copy of Figure 1 showing reference numeral 16F.

Claim 3 stands objected to because the word "prior" is placed at a wrong place. Applicants have corrected claim 3.

Claims 6-7, 10, and 12-13 are rejected because of insufficient antecedent basis. The Examiner's assumptions were correct and the dependencies of claims 6, 7, 10, 12, and 13 have been changed. Some of the other claims have also been amended to improve clarity and form.

Claims 1-19 stand rejected under 35 U.S.C. §103(a) as being unpatentable over *Ibanez-Meier* (6,151,308) in view of *Mesecher* (6,289,004). Applicants respectfully traverse.

Claim 1 is directed to a communication system that includes a stratospheric platform having a payload controller and a phased array antenna having a plurality of elements for generating a first beam and a second beam. A gateway station in

communication with said stratospheric platform receives a first signal having a first beam having interference from the second beam therein and a second signal having a second beam having interference from the first beam therein. The gateway station includes a first subtracting block for subtracting the second signal from the first signal to obtain the first beam and a second subtracting block for subtracting the first signal from the second signal to obtain a second beam.

The Examiner cites the *Ibanez-Meier* reference for teaching a stratospheric platform having a payload controller that generates various beams. Also, as the Examiner points out, a reference to communication gateways exists in Col. 4, lines 60-65. The *Ibanez-Meier* reference teaches stratospheric platforms and satellites at various altitude levels. A user may receive signals from two different sources. The system relies on spatial diversity to prevent interference. As the reference implies, when two signal sources become colinear or near colinear, interference between the signals may result in unacceptable signal degradation. As stated beginning in Col. 16, line 61, signal degradation may be remedied by ceasing to communicate over one of the links in which degradation is present or switching to another link. This highlights the spatial diversity aspect for resolving interference. No teaching or suggestion is provided for subtracting signals as in the present invention.

The *Mesecher* reference is cited for the teaching of a first subtracting block and a second subtracting block. Applicants agree that the *Mesecher* reference does provide adaptive cancellation and uses subtraction. However, the way in which *Mesecher* prevents interference is different from that recited in the claims of the present invention. As recited in claim 1 of the present application, "said gateway

station receiving a first signal having the first beam having interference from the second beam therein and receiving a second signal having the second beam having interference from the first beam therein.” It should be noted from this recitation that two signals are received to form two beams. This is in contrast to the *Mesecher* reference that employs a separate antenna that is directed to an interference source. The interference source signal from the interference source antenna is subtracted from the received signal. As described in the Abstract of the *Mesecher* reference, the adaptive interference canceler system of *Mesecher* includes a main antenna for receiving signals from other communication stations and at least one directional antenna directed towards an interference source. The main and directional antennas are coupled to the adaptive canceler, which weights signals received by the directional antennas and sums the weighted signals to produce a cancellation signal. The adaptive canceler then subtracts the cancellation signal from the signals received by the main antenna to provide an output signal substantially free from the interference generated by the one or more known interference sources. Applicants teach “said gateway station comprising a first subtracting block for subtracting said second signal from said first signal to obtain the first beam” and “said gateway station comprising a second subtracting block for subtracting said first signal from said second signal to obtain a second beam.” Thus, the constituents of each beam being subtracted are different from that of the *Mesecher* reference. Therefore, no teaching or suggestion is provided for “said gateway station comprising a first subtracting block for subtracting said second signal from said first signal to obtain the first beam” and “said gateway

station comprising a second subtracting block for subtracting said first signal from said second signal to obtain a second beam.”

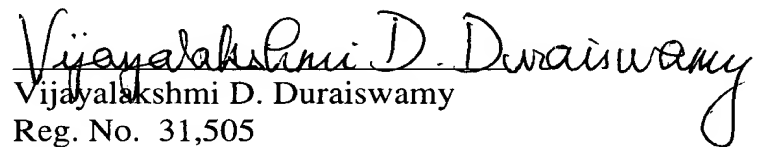
It would not be obvious to combine the two references since the *Ibanez-Meier* reference teaches away from the use of subtracting signals by its use of spatial diversity. The *Ibanez-Meier* reference acknowledges the fact that two signals may interfere but chooses to move the link or shut down the link in the presence of interference. The *Mesecher* reference uses a separate antenna directed at the interference source to provide an interference signal to be subtracted from a received signal. Thus, even if the references are combined, the present invention is not formed. Namely, said gateway station comprising a first subtracting block for subtracting said second signal from said first signal to obtain a first beam and said gateway station comprising a second subtracting block for subtracting said first signal from said second signal to obtain a second beam is not taught or suggested.

Independent claim 14 is similar to that of claim 1 in method form. Claim 18 is a method claim that has been amended to improve method form and include further details from claim 1. Therefore, dependent claims 2-19 are also believed to be allowable generally for the same reasons set forth above with respect to claim 1 and further due to the additional limitations recited therein.

New claims 20-24 are also believed to be allowable.

In light of the above amendments and remarks, Applicants submit that all rejections are now overcome. Applicants have added no new material to the application by these amendments. The application is now in condition for allowance and expeditious notice thereof is earnestly solicited. Should the Examiner have any questions or comments which would place the application in better condition for allowance, he is respectfully requested to call the undersigned attorney.

Respectfully submitted,


Vijayalakshmi D. Duraiswamy
Reg. No. 31,505

Enc.: Corrected Fig. 1. (One drawing sheet) with Letter to Official Draftsperson

Date: May 5, 2003
HUGHES ELECTRONICS CORPORATION
ES/001/M.S. A109
P. O. Box 956
El Segundo, CA 90245-0956
Telephone: (310) 662-9919